WHAT IS CLAIMED IS:

1. A method for fitting a rotor enclosure over at least one assembly of field windings mounted on a rotor core, said method comprising the steps:

a. applying a force to elastically reduce a circumference of the at least one assembly of field windings mounted on the rotor core, where the reduction in circumference is greater than a circumference reduction due to just eliminating clearances between adjacent end-turns of windings;

b. generating a clearance between the field windings and the rotor enclosure due to the application of the force and by matching a cross-sectional shape of the enclosure to a shape of the circumference of the at least one assembly of field windings;

c. axially sliding the rotor enclosure over the at least one assembly of field windings while the circumference is reduced, and

d. releasing the force to allow the circumference of the at least one assembly of field windings to expand and cause the enclosure to tightly fit on the at least one assembly of field windings.

2. A method as in claim 1 further comprising the step of deforming a cross-sectional shape of the rotor enclosure to match a circumferential shape of the reduced at least one winding assembly and rotor.

3. A method as in claim 1 wherein the rotor enclosure is a single cylinder.

4. A method as in claim 1 wherein the rotor enclosure is a series of rings, and steps (a), (b), (c) and (d) are repeated as each ring is sequentially fitted over the at least one assembly of field windings.

5. A method as in claim 1 wherein said at least one assembly of field windings is a pair of field windings assemblies mounted opposite to each other on said rotor core.

6. A method as in claim 1 wherein the rotor enclosure is a non-metallic composite material.

7. A method as in claim 1 wherein a deformation collar around the enclosure applies the force to deform the enclosure.

8. A method as in claim 1 further comprising the step of applying a metallic shield over the rotor enclosure.

9. A method as in claim 1 wherein forces are applied to deform the cross-section shapes of both end-turns of the windings and the rotor enclosure.

10. A method of assembling a plurality of field windings and securing the windings on a rotor core comprising the steps of:

a. arranging a plurality of field windings in a winding assembly;

b. mounting the winding assembly on the rotor core;

c. deforming the winding assembly on the rotor core to reduce a circumference of the assembly on the rotor core, where the deformation includes deforming spacers between the windings;

d. deforming a cross-sectional shape of a cylindrical rotor enclosure to match a circumferential shape of the winding assembly as mounted on the rotor core and thereby create a clearance between the enclosure and end-turn;

e. sliding the deformed rotor enclosure over the mounted winding assembly, and

f. releasing the deformation of the rotor enclosure after the enclosure is positioned over the winding assembly.

11. A method as in claim 10 wherein the rotor enclosure is a single cylinder.

12. A method as in claim 10 wherein the rotor enclosure is a series of rings, and steps (a) to (e) are repeated as each ring is fitted over the at least one assembly of field windings.

13. A method as in claim 12 wherein said at least one assembly of field windings is a pair of field windings assemblies mounted opposite to each other on said rotor core.

14. A method as in claim 10 wherein the rotor enclosure is a non-metallic composite material.

15. A method as in claim 10 wherein a deformation collar around the enclosure applies the force to deform the enclosure.

16. A method as in claim 10 further comprising the step of applying a metallic shield over the rotor enclosure.

17. A rotor for an electric machine comprising:

a rotor core having a pair of opposite pole faces, and a pair of opposite fins, where the pole faces extend radially further than do the fins;

at least one winding assembly mounted around one of the pole faces; and

a rotor enclosure having a nominal circular cross section which is smaller in diameter than a distance between the opposite pole faces, and said diameter is larger than a distance between opposite ends of the fins.